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Expansion and Activity at Selected Soviet Missile and Space R&D Facilities, 1965–1986 (S)

Basic Imagery Interpretation Report

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Basic Imagery Interpretation Report

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Expansion and Activity at Selected Soviet Missile and Space R&D Facilities, 1965–1986 (S)

Abstract

Imagery available as of [redacted] *was used in this report. (S/WN)*

Expansion and activity at a number of Soviet missile and space research and development facilities* (Figure 1) and their associated design bureaus increased significantly between 1965 and mid-1986. Expansion in the research, design, and production areas at these facilities provides insight into the status of new Soviet missile and space systems because it has usually coincided with the development of those systems. (S/WN)

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Figure 1. Locations of the Soviet Missile and Space R&D Facilities Described in This Report

1	Dnepropetrovsk Missile Development and Production Center	7	Moskva Guided Missile and Space Research and Production Center Reutov
2	Krasnoarmeysk Solid Motor Development Facility	8	Moskva Missile Production Plant Fili 23
3	Leningrad Arms Plant Kraznoye Znamya Frunze 7	9	Moskva Scientific Research Institute of Medium Machine Building Industry (NII-MM)
4	Leningrad Naval Missile Central Design Bureau 18	10	Moskva Solid Motor Production Plant Lyubertsy
5	Miass Missile Research and Development Facility	11	Perm Special Design Bureau
6	Moskva Aircraft Components Plant 25		

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*Data block information can be found in Table A1.

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The most significant construction and activities occurred at the following facilities.

- At Dnepropetrovsk Missile Development and Production Center, new construction, building modifications, and renovations, along with sightings of system-unique components at the plant, indicate that prototype production of the SL-X-16 and/or the thrust augmentation booster for the reusable space shuttle and the TT-09 (SS-18 follow-on) is under way. (S/WN)

- At Miass Missile Research and Development Facility, floorspace has increased 57 percent; the greatest increase occurred between 1970 and 1979, probably in support of systems such as the SS-N-17 and SS-N-18 that were flight-tested during the mid-to-late 1970s. Buildings constructed between 1980 and 1985 have increased floorspace 10 percent and may support systems to be flight-tested in the late 1980s and early 1990s. (S/WN)

- At Moskva Aircraft Components Plant 25, floorspace increased 36 percent between 1970 and 1974, probably in support of naval cruise missile prototype production. (S/WN)

- At Moskva Missile Production Plant Fili 23, floorspace increased 14 percent between 1965 and 1969 and 11 percent between 1975 and 1979. Expansion was probably in support of space programs during the earlier period and series production of the SL-12/-13 during the latter period. (S/WN)

- At the Moskva Scientific Research Institute of Medium Machine Building Industry (NII-MM), floorspace increased 51 percent between 1970 and 1974, probably in support of the development of the SS-16 ICBM and the SS-20 IRBM. (S/WN)

- At Moskva Solid Motor Production Plant Lyubertsy, two new facilities are under construction; one of the facilities may be associated with directed-energy research programs and the other facility is probably a solid-propellant waste disposal facility. (S/WN)

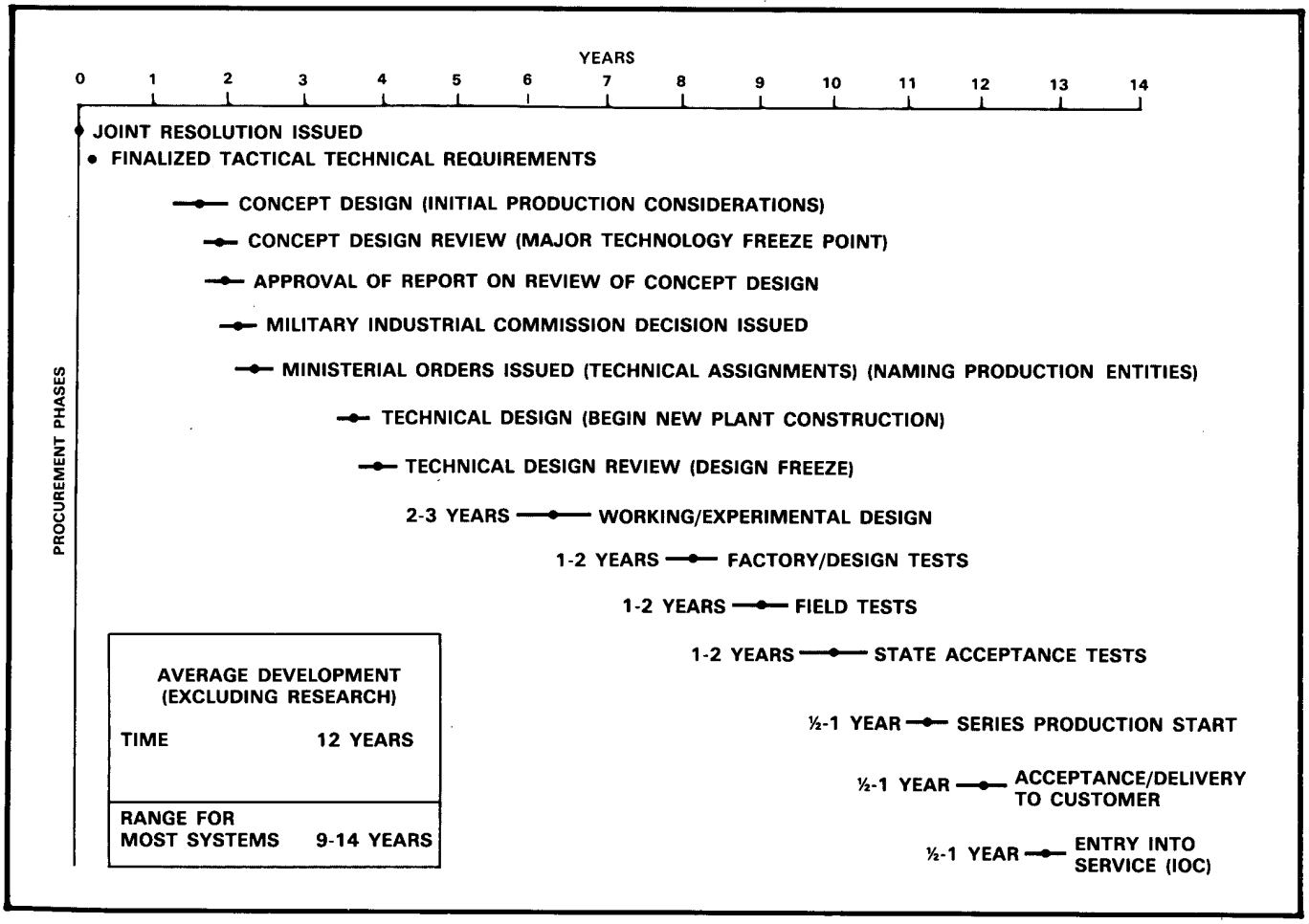
The facilities, the missile or space systems associated with these facilities, and activity associated with these systems are described in this report. Information on the design bureaus with which these facilities are affiliated, detailed plan views and tabular data that detail construction within the established facilities since 1965, other tabular data, photographs, and data block information are contained in the Appendixes. This report has been prepared in response to current interest in Soviet missile and space research and development. (S/WN)

Expansion and Activity at Selected Soviet Missile and Space R&D Facilities, 1965–1986 (S)

Introduction

The development of most Soviet missile and space systems requires between nine and 14 years[1] (Figure 2), and thus, the 21-year period covered by this report encompasses most of the systems under development for deployment through the 1990s. The Soviet process for developing new major weapons systems is divided into two broad stages: scientific research and experimental design work. The scientific research ranges from very basic studies through exploratory and applied research to feasibility demonstrations of weapons concepts and technologies. The experimental design work is the actual designing, prototyping, and testing of a specific weapons system. The facilities and design bureaus discussed in this report are primarily involved in the experimental design stage of weapons procurement in the USSR. (S/WN/NF)

Figure 2. Estimated Timelines of Key Phases for Soviet Major Weapons Procurement[1]



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Basic Description

Dnepropetrovsk Missile Development and Production Center

The Dnepropetrovsk Missile Development and Production Center (Figure B1 and Table B1), on the southern edge of the city of Dnepropetrovsk, Dnepropetrovsk is one of the oldest and largest Soviet missile and space production facilities, and numerous missile and space-launch vehicles have been designed and produced there. (S/WN/NF)

Floorspace in the missile- and space-associated areas has continued to increase (Table 1); in addition, preexisting floorspace has been modified to support new missile and space programs as production of some older systems has been discontinued. For example, conversion of building floorspace was evident in 1979, when the SS-4/-5 assembly lines in a fabrication/assembly building (item 74, Figure B1 and Table B1) were dismantled, and in 1981, when the SS-9 line(s) in another fabrication/assembly building (item 56) was/were dismantled and subsequently modified or converted.

Table 1.
Floorspace Increases at Dnepropetrovsk Missile Development and Production Center, 1965–1986

Period	Completed Floorspace (sq m)	Percent of Increase
Through 1964	406,077	—
1965–69	71,299	18
1970–74	151,492	32
1975–79	68,407	11
1980–86	83,421	11
Total floorspace	780,696	

This table is classified Secret/WNINTEL.

The areas constructed during the late 1970s probably supported prototype production of the SL-X-16: a chamfer-roofed crate on a drop-center railcar, similar to those seen at Kuybyshev Aerospace Production Plant 1 and Tyuratam Missile and Space Test Center SSM was in the plant in July 1980; a 14-meter-long component associated with that system was identified in the plant in January 1982; SL-X-16-associated railcars were identified in the plant in early 1983; and the number of SL-X-16 components in the plant has increased since 1983. In 1980, construction of series production facilities for the booster systems of the Soviet reusable space shuttle began: the thrust augmentation boosters are produced at Dnepropetrovsk and the core vehicles are produced at Kuybyshev. (S/WN)

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Dnepropetrovsk continues to produce Belarus tractors, which are used in the USSR and exported to other countries—including the US and Canada. Floorspace continues to be increased in buildings dedicated to the assembly of tractors (Table B1), and the associated test areas are being upgraded and expanded to support the increase in production. Tractor components were seen throughout the plant in the months preceding the spring 1985 planting season. The areas associated with tractors are mostly separate from those associated with missile and space systems. (S/WN)

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Construction at the rocket engine test facility at Dnepropetrovsk suggests preparations for at least one new liquid-propellant system. The construction included a new large pre-/postfire checkout building, test stand modifications, increased blower line capacity for fume removal, a new power substation, additional water storage areas, new support buildings, and new rail lines. Ground preparations for additional buildings were continuing through September 1986. (S/WN)

Leningrad Arsenal Production Association

Leningrad Arms Plant Kraznoye Znamya Frunze 7

Leningrad Arms Plant Kraznoye Znamya Frunze 7 (Figure B2 and Table B2) is a component of the Leningrad Arsenal Production Association.[2] Most of the items or products associated with the plant have been determined through collateral sources.

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The SS-13 motor cases produced at Leningrad Arms Plant 7 were filled with solid propellants at Petrokrepost Solid Motor Production Plant Morozov (BE [3] The associated motor test facilities for Petrokrepost are at Leningrad Solid Motor Test Facility 1 a naval gun and artillery range at Petrokrepost may also be used to test products from Leningrad Arms Plant 7. (S/WN/NF)

Floorspace at Leningrad Arms Plant 7 has increased 12 percent since the mid-to-late 1970s. Some existing floorspace was possibly rededicated. Until 1985, a large number of tank trailers were seen in the northwestern section of the plant.

A chamfer-roofed crate on a drop-center railcar and a wedge-shaped crate similar to those seen at Kuybyshev Plant 1 and at Tyuratam Missile and Space Test Center SSM have been observed in the plant. the wedge-shaped crate was seen in 1981. The presence of these crates indicates that components for current Soviet space programs may be produced at the facility. An SA-5 transporter seen at the facility during the late 1970s indicates the possible production of SA-5 components. (S/WN)

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Perm Special Design Bureau

Perm Special Design Bureau is also believed to be a part of the Leningrad Arsenal Production Association. No construction equipment or activity has been observed since 1982, the date of the last NPIC Basic Imagery Interpretation Report on the facility.[5a] (S/WN/NF)

Leningrad Naval Missile Central Design Bureau 18

No significant information could be derived from available imagery. (S/WN) 25X1

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Miass Missile Research and Development Facility

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Miass Missile Research and Development Facility (Figure B3 and Table B3), affiliated with the Makeyev Design Bureau,[2] is the design authority for naval SLBMs. Floorspace at Miass has increased 57 percent since 1964 (Table 2); most of the construction occurred between 1970 and 1979, with the greatest number of buildings constructed between 1975 and 1979. Construction during the 1970s probably supported systems, such as the SS-N-17 and SS-N-18, that were flight-tested during the mid-to-late 1970s. Buildings constructed between 1980 and 1985 have increased 25X1
floorspace 10 percent and may support systems to be 25X1
flight-tested in the late 1980s and early 1990s. (S/WN/NF) 25X1

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Table 2. 25X1
Floorspace Increases at Miass Missile Research and Development Facility, 1965–1986 25X1

Period	Completed Floorspace (sq m)	Percent of Increase
Through 1964	113,523	—
1965–69	3,519	3
1970–74	18,000	13
1975–79	44,588	24
1980–86	18,278	10
Total floorspace	197,908	

This table is classified Secret/WNINTEL.

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Moskva Aircraft Components Plant 25

The only significant expansion at Moskva Aircraft Components Plant 25 (Figure B4 and Table B4), affiliated with the Chelomey Design Bureau,[2] occurred between 1970 and 1974, when floorspace increased 36 percent (Table 3). (S/WN/NF)

Table 3.
Floorspace Increases at Moskva Aircraft Components Plant 25, 1965–1986

Period	Completed Floorspace (sq m)	Percent of Increase
1964–69	59,466	—
1970–74	33,900	36
1975–79	7,752	8
1980–86	-1,950	-2
Total floorspace	99,168	

This table is classified Secret/WNINTEL.

The absence of high-resolution imagery has limited the identification of components that could be associated with missile or space programs. However, in early 1972, a number of items associated with cruise missile systems designed by the Chelomey Design Bureau were observed at the plant (an SS-N-3/-12 crate, an SS-N-12 canister, MAZ-938 semitrailers with prime movers, and possible dollies). The presence of these items suggested that cruise missile prototype production was under way.

ty. The cargo area of the transporters was similar in size and appearance to the cargo areas of transporters used in support of the SS-NX-24 at Moskva Reutov and at Severodvinsk Naval Missile Support Facility (BE The presence of the transporters indicates that the plant continues to support naval cruise missile development programs.

The new construction further indicates that within two or three years additional floorspace will be available to support the developmental programs. (S/WN)

Moskva Guided Missile and Space Research and Production Center Reutov

Moskva Reutov (Figure B5 and Table B5), affiliated with the Chelomey Design Bureau,[2] has been and is still probably involved in space payload and/or spacecraft production and prototype production of naval cruise missile systems. At least three naval cruise missile systems are in development at the facility: the SS-NX-24, the SS-N-12 follow-on, and either a follow-on to the SS-N-19 or a new missile system. (S/WN/NF)

Missile crates and high levels of vehicular activity have been observed since 1982. The crates suggest that prototypes of the SS-NX-24, the SS-N-12 follow-on, the SS-N-19 follow-on, and possibly a new missile system are being produced. In addition, on 25X1
a large canvas-covered probable space payload, 25X1
approximately was seen on the 25X1
apron in front of a space-associated assembly/checkout building. (S/WN)

Construction at Moskva Reutov (Table 4) has been minimal since the surge in the late 1960s that resulted in a 14-percent increase in floorspace. The only other construction occurred between 1975 and 1979, when floorspace increased 2 percent; these buildings, with the exception of a personnel shelter, may have been for the production of prototype cruise missiles to be flight-tested in the late 1980s. (S/WN)

Table 4.
Floorspace Increases at Moskva Guided Missile and Space Research and Production Center Reutov, 1965–1986 25X1 25X1

Period	Completed Floorspace (sq m)	Percent of Increase
Through 1964	181,168	—
1965–69	29,689	14
1970–74	0	0
1975–79	4,673	2
1980–86	0	0
Total floorspace	215,530	

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This table is classified Secret/WNINTEL.

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Moskva Missile Production Plant Fili 23

Of the facilities associated with the Chelomey Design Bureau,[2] the greatest increase in floorspace has occurred at Moskva Missile Production Plant Fili 23 (Figure B6 and Table B6). Floorspace increased 14 percent (Table 5) between 1965 and 1969, probably in support of space programs, and 11 percent between 1975 and 1979, probably in support of series production of the SL-12/-13 (PROTON). Construction during the 1980s suggests that preparations for at least one new missile or space program, which should be identified within the next three to five years, are under way. (S/WN/NF)

Table 5.
Floorspace Increases at Moskva Missile Production Plant Fili 23, 1965–1986

Period	Completed Floorspace (sq m)	Percent of Increase
Through 1964	386,543	—
1965–69	63,897	14
1970–74	10,974	2
1975–79	60,959	11
1980–86	37,562	6
Total floorspace	559,935	

This table is classified Secret/WNINTEL.

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Table 6.
Floorspace Increases at Moskva Scientific Research Institute of Medium Machine Building Industry, 1965–1986

Period	Completed Floorspace (sq m)	Percent of Increase
Through 1964	32,796	—
1965–69	5,845	18
1970–74	75,769	51
1975–79	17,539	15
1980–86	19,138	15
Total floorspace	151,087	

This table is classified Secret/WNINTEL.

Since 1979, floorspace has been increased another 15 percent. The buildings constructed between 1980 and 1986 are probably for systems that are in the early stages of development and have not been identified by imagery 25X1 By 25X1

25X1

Solid-Propellant Research and Development Facilities

Two major solid-propellant R&D facilities are Krasnoarmeysk Solid Motor Development Facility and Moskva Solid Motor Production Plant Lyubertsy. Two new facilities are under construction at Moskva Lyubertsy; one facility may be associated with directed-

energy research and the other is probably a solid-propellant waste disposal facility. At Krasnoarmeysk, probable SS-25-associated training has periodically been seen since 1983. A variety of missile containers and motors continue to be seen at the facility. Monitoring these two facilities to determine R&D trends in the production of new missile propulsion systems has been limited. Appendix A contains background information on these facilities. (S/WN)

Appendix A

Appendix A contains information on the design bureaus with which the missile and space R&D facilities described in this report are affiliated, including tabular data on the missile systems associated with each; information on the solid-propellant R&D facilities; and data block information (Table A1). (S/WN)

Design Bureaus

Chelomey Design Bureau

The Chelomey Design Bureau, headed by V. N. Chelomey until his death in early 1985, has been involved in the development of cruise and ballistic missiles, space launch vehicles, and space payloads (Table A2).[2] The bureau is composed of three facilities: Moskva Missile Production Plant Fili 23, Moskva Guided Missile and Space Research and Production Center Reutov, and Moskva Aircraft Components Plant 25. All three facilities are in the Moscow area. (S/WN/NF)

Makeyev Design Bureau

The Makeyev Design Bureau, headed by V. P. Makeyev until his death in late 1985, is composed of Miass Missile Research and Development Facility and five production facilities and has been responsible for the design and integration of naval SLBMs[2] (Table A3). Of all the systems developed by this bureau, only the SS-N-17, SS-N-20, and SS-N-20 follow-on are solid-propellant systems. Few SS-N-5s and SS-N-6s have been deployed in recent years, and the SS-N-17 has only one dedicated launch platform.[8] (S/WN/NF)

Production facilities associated with Miass and the Makeyev Design Bureau are at Zlatoust and Krasnoyarsk. Construction at Zlatoust Rocket Engine Test Facility ( ) and at Zlatoust Armaments Plant 66 ( ) indicates preparations for a new liquid-propellant SLBM program. Preparations continue for an SS-N-20 follow-on at Zlatoust SLBM Assembly Facility ( ). New construction or modification is expected at Krasnoyarsk Guided Missile and Arms Plant Voroshilov 4 ( ) and at Krasnoyarsk Rocket Engine Test Facility ( ) (S/WN)

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The Utkin Design Bureau is primarily a developer of liquid-propellant missile systems and is involved in the development of the TT-09 (SS-18 follow-on). Activity at Dnepropetrovsk, including new construction and renovation of facilities, indicates the development of additional liquid-propellant missile systems. Additionally, Utkin has recently become more involved in the development of a probable solid-propellant in the SS-X-24 class; the part of the organization that has historically been involved in solid-propellant missile systems is probably housed at Pavlograd Solid Motor Production Complex, approximately 75 kilometers east-northeast of Dnepropetrovsk. (S/WN)

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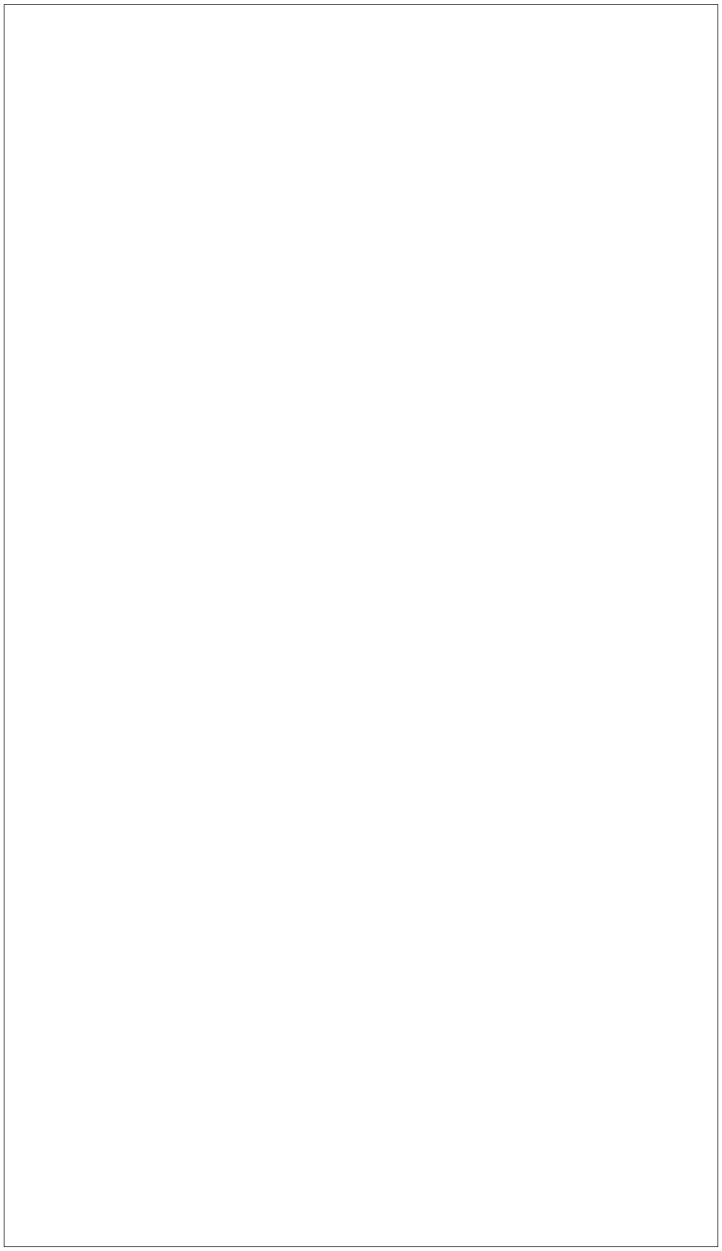

The Krasnoarmeysk facility (Figure A1) includes the naval cruise and SAM test area; the original design bureau 3 test area; design bureau 3 (the administration and motor production area); the test article receiving and storage area; the air-breathing engine test area; the rocket motor assembly, checkout, and test area; the missile motor/engine and munitions development and fragmentation test area; the solid-propellant-associated area; and Krasnoarmeysk Isolated Motor Test Area (The presence of the Ministry of Defense Industry, the Ministry of Aviation Industry, and the Ministry of General Machine Building is evident in the facility[2]—numerous items associated with these ministries have been identified at the complex since the mid-1970s. (S/WN/NF)

A probable training facility for mobile missile command, control, and communications may have been established in the design bureau 3 test area. Evidence of such a training facility is the construction of an administration building and support structures during 1977 and 1978; the periodic presence of missile support vehicles since late 1978; and the construction of two mobile missile-associated, type B single-bay garages in 1981. Periodically, camouflaged missile support vans with erect antennas have been seen within the complex. A training exercise involving a camouflaged missile support van with a dual-masted antenna was seen at the probable training facility during May and June 1983. Missile support vans of this type have since been associated with SS-25 deployment. One of the single-bay garages was twice observed with the roof open. During 1978 and 1979, SS-12 canisters were observed at Krasnoarmeysk. In April and May 1980, a canvas-covered, probable ballistic missile airframe mockup was seen in the original design bureau 3 test area. (TSR)

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After the construction of a large building in the cruise missile and SAM test area in 1973, sightings of naval cruise missile containers increased. The containers observed included SS-N-2, SS-N-3/-12, SS-N-7/-9/-19, and SS-N-14 crates and SS-NX-21/SSC-X-4 canisters. Between late 1983 and early 1984, an increased number of SS-N-3/-12 crates, possibly containing the SS-N-12 follow-on, was seen first in the receiving area and subsequently in the test area. The presence of an increased number of SS-N-2 crates in late 1984 indicated that a missile of Bereznyak design[2] would soon be flight-tested. An indication that a naval cruise or SAM system will soon be flight-tested would be the presence of containers for that system at Leningrad Solid Motor Test Facility 3 prior to their delivery at Krasnoarmeysk. (S/WN/NF)

Two horizontal test positions continue to be used for the static testing of motors in the rocket motor assembly, checkout, and test area. The large test position was upgraded in 1979 and the small test position was

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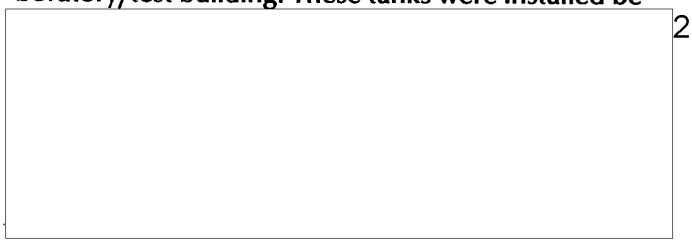
upgraded in 1982. Large motors/containers continue to be discarded near the large horizontal test position.

Infrequent imagery precluded an identification of the various specific missile development programs. (S/WN)

Moskva Solid Motor Production Plant Lyubertsy

Moskva Solid Motor Production Plant Lyubertsy is a solid-propellant and motor case research and development facility (Figure A2). Because the plant is in a heavily forested area and because of infrequent high-resolution coverage, no additional information on new motor types or sizes could be obtained. (S/WN)

A new laboratory/test facility that may be associated with the possible is in late stages of construction in the northeast part of the plant. The laboratory/test facility consists of two buildings and several tanks. A two-story, circular structure containing a 10-meter spherical or dome-shaped tank is connected by a passageway with a large rectangular laboratory/test building. A horizontal tank (25X1
meters) has been mounted on the roof of the laboratory/test building; the tank came from the roof of the magnetohydrodynamic (MHD) building at the nearby possible Two spherical tanks, one 16 and one 10 meters in diameter, are adjacent to the laboratory/test building. These tanks were installed be-



A probable solid-propellant waste disposal facility is in the late stages of construction. The facility will probably be an environmentally controlled means for solid-propellant rocket motor waste disposal and consists of a large, rectangular, step-roofed building with two massive circular steel structures (one with a spherical or dome-shaped tank) on opposite sides of the building. The facility is very similar to a probable waste disposal facility at Kamensk Shakhtinskiy Chemical Combine 101 which contains two spherical or dome-shaped tanks mounted in circular steel structures. (S/WN)

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Table A1.
Installation Data for Selected Soviet Missile and Space R&D Facilities

Installation Name	Geographic Coordinates	Category	BE No	COMIREX No	MRN No
Dnepropetrovsk Missile Development and Production Center	48-26-05N 034-59-30E				
Krasnoarmeysk Solid Motor Development Facility	56-07-50N 038-09-54E				
Leningrad Arms Plant Kraznoye Znamya Frunze 7	59-57-36N 030-22-05E				
Leningrad Naval Missile Central Design Bureau 18	59-56-12N 030-20-27E				
Miass Missile Research and Development Facility	55-06-42N 060-08-19E				
Moskva Aircraft Components Plant 25	55-47-06N 037-43-40E				
Moskva Guided Missile and Space Research and Production Center Reutov	55-45-49N 037-52-18E				
Moskva Missile Production Plant Fili 23	55-45-39N 037-29-34E				
Moskva Scientific Research Institute of Medium Machine Building Industry (NII-MM)	55-51-13N 037-36-01E				
Moskva Solid Motor Production Plant Lyubertsy	55-36-48N 037-52-40E				
Perm Special Design Bureau	58-06-30N 056-22-30E				

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Appendix B

Contents

Figure B1. Dnepropetrovsk Missile Development and Production Center

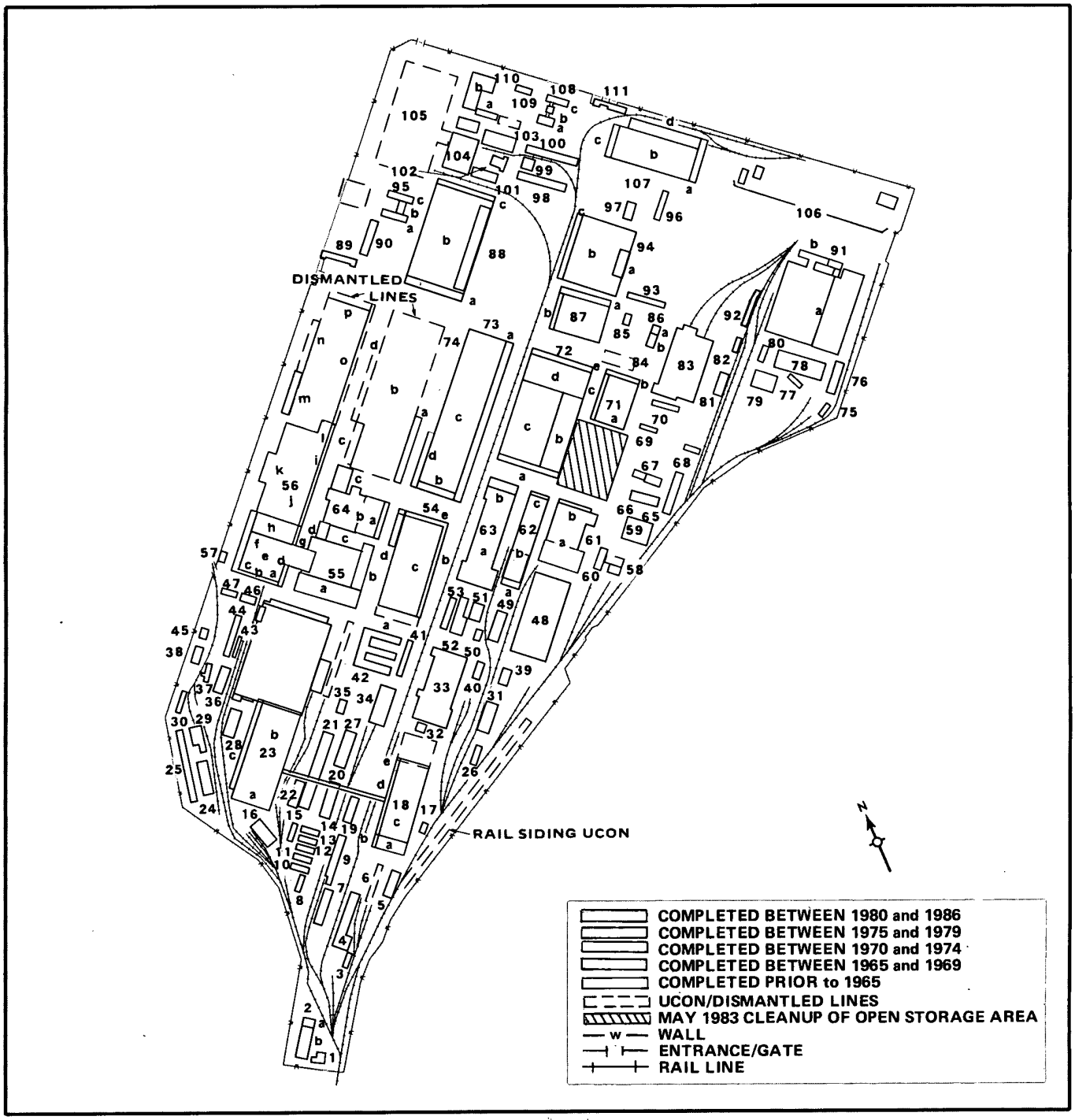

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Table B1.
Dnepropetrovsk Missile Development and Production Center
(Keyed to Figure B1)

Item	Description	Dimensions (m) L	W	H	Floorspace (sq m)	Comments
1	Warehouse	—	—	—	624	Irregular
2	Admin bldg					
a	Admin sect	72	24	16	5,184	3 stories
b	Spt sect	24	18	16	432	
3	Spt bldg	33	12	8	396	
4	Warehouse	—	—	—	2,990	Irregular
5	Shop	60	18	17	1,080	
6	Shop	—	—	—	1,674	Irregular; addition ucon
7	Warehouse	85	20	9	1,700	
8	Warehouse	40	12	5	480	
9	Warehouse	97	18	11	1,746	
10	Warehouse	41	13	5	533	
11	Warehouse	—	—	—	785	Irregular
12	Warehouse	45	12	4	540	
13	Warehouse	45	13	3	585	
14	Warehouse	39	13	4	507	
15	Warehouse	42	13	6	546	
16	Warehouse	64	26	4	1,664	
17	Warehouse	24	13	3	312	
18	Fab/assem bldg					New section ucon;
a	Shop sect	73	26	18	1,898	tractor production
b	Shop sect	21	11	—	231	
c	Assem/fab sect	181	73	18	13,213	
d	Admin/engr sect	163	11	12	5,379	3 stories
e	Shop sect	21	11	—	231	
19	Warehouse	68	18	5	1,224	
20	Warehouse	84	19	9	1,596	
21	Warehouse	177	25	6	4,425	
22	Warehouse	—	—	—	1,183	Irregular
23	Fab/assem bldg					Tractor production
a	Admin/assem sect	98	12	16	4,704	4 stories
b	Fab/assem sect	221	90	14	19,890	
c	Fab/assem sect	215	12	12	2,580	
d	Fab/assem sect	55	12	9	660	
e	Fab/assem sect	28	7	8	196	
f	Fab/assem sect	18	12	9	216	
g	Fab/assem sect	78	22	11	1,716	
h	Fab/assem sect	222	163	10	36,186	
i	Shop sect	30	7	12	210	
j	Shop sect	134	10	11	1,340	
24	Admin/engr bldg	79	24	9	3,792	2 stories
25	Shop	168	10	—	1,680	
26	Warehouse	49	13	8	637	
27	Warehouse	91	37	14	3,367	
28	Warehouse	63	25	7	1,575	
29	Warehouse	37	10	—	370	
30	Warehouse	—	—	—	644	Irregular
31	Shop	—	—	—	2,990	Irregular
32	Spt bldg	21	16	6	336	

Table B1. (Continued)

Item	Description	Dimensions (m) L	W	H	Floorspace (sq m)	Comments
33	Fab/assem bldg	—	—	—	13,474	Irregular
34	Shop	91	37	14	3,367	
35	Spt bldg	30	15	7	450	
36	Warehouse	—	—	—		Irregular
37	Warehouse	36	10	6	360	
38	Warehouse	37	13	6	481	
39	Fab/assem bldg	36	22	4	792	
40	Shop	42	20	10	840	
41	Admin/engr bldg	98	12	8	3,528	3 stories
42	Admin/engr bldg	—	—	—	14,755	Irregular
43	Spt bldg	60	13	6	780	
44	Spt bldg	96	15	9	1,440	
45	Spt bldg	—	—	—	408	Irregular
46	Spt bldg	28	18	4	504	
47	Spt bldg	37	13	6	481	
48	Fab/assem bldg	—	—	—	19,254	Irregular
49	Spt bldg	—	—	—	1,372	Irregular
50	Spt bldg	42	20	10	840	
51	Spt bldg	72	16	12	1,152	
52	Spt bldg	—	—	—	982	Irregular
53	Spt bldg	72	16	12	1,152	
54	Fab/assem bldg					
a	Function undetermined	—	—	—		Ucon
b	Admin/engr sect	209	8	15	5,016	3 stories
c	Fab/assem sect	209	89	13	18,601	
d	Fab/assem sect	72	18	11	1,296	
e	Admin/engr sect	122	10	15	3,660	3 stories
55	Fab/assem bldg					
a	Fab/assem sect	136	43	24	5,848	
b	Fab/assem sect	90	25	23	2,250	
c	Fab/assem sect	83	25	23	2,075	
d	Fab/assem sect	—	—	—	2,021	Irregular
56	Fab/assem bldg					
a	Admin/engr sect	—	—	38	5,010	10 stories; irregular
b	Admin/engr sect	78	12	33	3,744	4 stories; irregular
c	Admin/engr sect	—	—	38	5,010	10 stories; irregular
d	Admin/engr sect	29	12	31	1,392	4 stories
e	Fab/assem sect	—	—	35	11,334	Irregular
f	Admin/engr sect	127	13	26	6,604	4 stories
g	Shop sect	48	12	15	576	
h	Fab/assem sect	104	48	26	4,992	
i	Lab/engr sect	186	7	9	3,906	3 stories
j	Fab/assem sect	529	104	26	55,016	
k	Admin/engr sect	72	9	15	1,944	3 stories
l	Shop sect	54	11	19	594	
m	Admin/engr sect	176	12	10	6,336	3 stories
n	Admin/engr sect	49	9	12	1,323	3 stories
o	Admin/engr sect	289	7	9	6,069	3 stories
p	Admin/engr sect	113	10	11	3,390	3 stories
57	Security/admin bldg	—	—	—	969	Irregular
58	Utility bldg	24	13	4	312	Addition ucon
59	Shop	—	—	—	3,012	Irregular

Table B1. (Continued)

Item	Description	Dimensions (m) L	W	H	Floorspace (sq m)	Comments
60	Power substation	44	16	12	704	
61	Fab/assem bldg					
a	Fab/assem sect	—	—	—	14,836	Irregular
b	Admin/engr sect	84	8	15	2,016	3 stories
62	Fab/assem bldg					
a	Admin/engr sect	49	12	12	1,764	3 stories
b	Fab/assem sect	167	49	17	8,183	
c	Admin/engr sect	49	12	12	1,764	3 stories
63	Fab/assem bldg					
a	Fab/assem sect	—	—	—	17,609	Irregular
b	Admin/engr sect	68	10	15	2,040	3 stories
64	Fab/assem bldg					
a	Admin/engr sect	88	9	12	2,376	3 stories
b	Fab/assem sect	—	—	8	17,726	Irregular
c	Shop sect	59	39	4	2,301	
65	Lab/admin bldg	98	19	12	5,586	3 stories
66	Spt bldg	60	15	7	900	
67	Spt bldg	38	12	8	456	
68	Lab/engr bldg	30	9	8	270	
69	Spt bldg	30	7	8	210	
70	Powerplant	62	9	11	558	
71	Fab/assem bldg					
a	Fab/assem sect	105	78	15	8,190	
b	Admin/engr sect	77	9	15	2,079	3 stories
c	Admin/engr sect	105	8	9	2,520	3 stories
72	Fab/assem bldg					
a	Admin/engr sect	145	10	9	4,350	3 stories
b	Fab/assem sect	182	48	12	8,736	
c	Fab/assem sect	182	72	17	13,104	
d	Fab/assem sect	144	67	14	9,648	
e	Admin/engr sect	182	8	7	4,368	3 stories
73	Fab/assem bldg					
a	Admin/engr sect	381	10	15	11,430	3 stories
b	Admin/engr sect	98	9	11	2,646	3 stories
c	Fab/assem sect	372	98	11	36,456	
d	Admin/engr sect	92	7	6	1,932	3 stories
74	Fab/assem bldg					
a	Lab/engr sect	157	13	28	2,041	
b	Fab/assem sect	—	—	22	47,684	Irregular
c	Fab/assem sect	54	25	46	1,350	
d	Admin/engr sect	153	9	11	4,131	3 stories
75	Spt bldg	29	9	4	261	
76	Lab/engr bldg	77	18	4	1,386	
77	Spt bldg	29	9	4	261	
78	Fab/assem bldg	103	36	12	3,708	
79	Shop	—	—	—	825	Irregular
80	Spt bldg	34	13	9	442	
81	Spt bldg	55	7	8	385	
82	Spt bldg	29	9	4	261	
83	Powerplant	—	—	—	15,120	Irregular
84	Unid construction	—	—	—	—	
85	Lab/engr bldg	—	—	—	3,074	Irregular

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Table B1. (Continued)

Item	Description	Dimensions (m) L	W	H	Floorspace (sq m)	Comments
86	Structural test bldg					
a	Structural test sect	37	13	38	481	
b	Spt sect	18	18	13	324	
87	Fab/assem bldg					
a	Admin/engr sect	93	8	9	2,232	3 stories
b	Fab/assem sect	111	82	9	9,102	
88	Fab/assem bldg					
a	Admin/engr sect	—	—	—	1,639	Irregular
b	Fab/assem sect	—	—	—	31,784	Irregular
89	Admin bldg	—	—	—	2,374	2 stories; irregular
90	Admin bldg	82	19	20	6,232	4 stories
91	Fab/assem bldg					
a	Fab/assem sect	168	168	20	28,224	
b	Admin/engr sect	85	36	17	12,240	4 stories
92	Warehouse	98	8	8	784	
93	Lab/engr bldg	—	—	—	6,236	Irregular
94	Fab/assem bldg					
a	Admin/engr sect	61	16	16	3,904	4 stories
b	Fab/assem sect	—	—	—	13,885	Irregular
c	Admin/engr sect	151	10	14	4,530	3 stories
95	Admin/engr bldg					
a	Admin/engr sect	62	16	45	9,920	10 stories
b	Spt sect	24	19	12	1,368	3 stories
c	Admin/engr sect	60	16	10	2,880	3 stories
96	Lab/engr bldg	—	—	—	4,634	Irregular
97	Admin/engr bldg	88	18	15	4,752	3 stories
98	Admin/engr bldg	124	12	18	4,464	3 stories
99	Structural test bldg	28	25	19	700	
100	Admin/engr bldg	126	16	17	8,064	4 stories
101	Admin/engr bldg	59	16	19	2,832	3 stories
102	Shop	—	—	—	1,068	Irregular
103	Structural test bldg	37	33	46	1,221	
104	Lab/engr bldg	—	—	—	2,232	Irregular
105	Fab/assem bldg	—	—	—	—	Ucon
106	Spt bldg	—	—	—	5,531	Irregular
107	Fab/assem bldg					
a	Lab/engr sect	73	12	22	3,504	4 stories
b	Fab/assem sect	179	73	21	13,067	
c	Admin/engr sect	73	11	24	4,818	6 stories
d	Fab/assem sect	180	24	21	4,320	
108	Admin/engr bldg					
a	Admin/engr sect	37	16	35	4,736	8 stories
b	Admin/engr sect	24	18	40	3,456	8 stories
c	Admin/engr sect	36	6	35	1,728	8 stories
109	Spt bldg	37	13	6	481	
110	Lab/engr bldg					
a	Admin/engr sect	58	12	16	2,784	4 stories
b	Structural test sect	—	—	—	3,604	Irregular
111	Security/admin bldg	—	—	—	2,578	Irregular

This table is classified Secret/WNINTEL.

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Figure B2. Leningrad Arms Plant Kraznoye Znamya Frunze 7

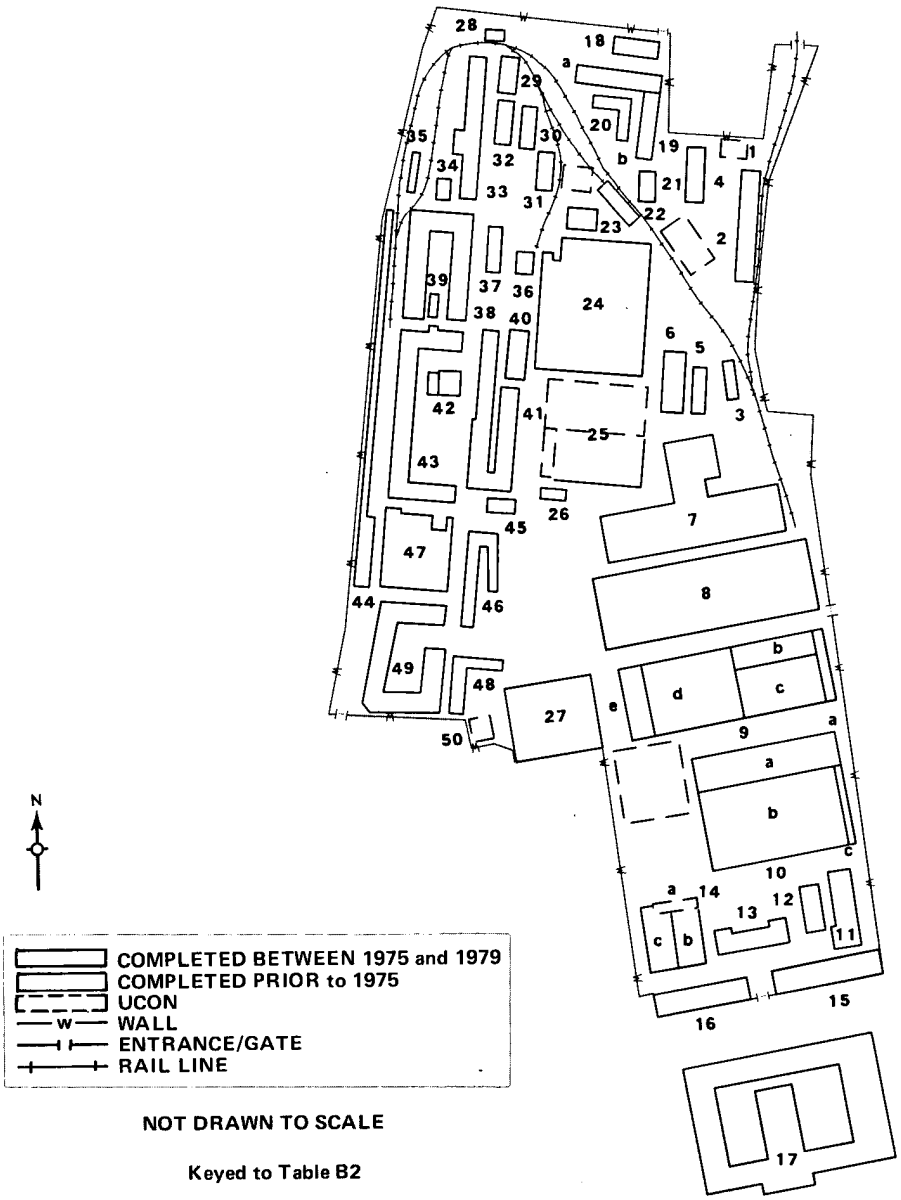

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Table B2.
Leningrad Arms Plant Kraznoye Znamya Frunze 7
(Keyed to Figure B2)

Item	Description	Dimensions (m) L	W	H	Floorspace (sq m)	Comments
1	Warehouse	26	16	—	416	Ucon
2	Admin/engr bldg	110	20	29	8,800	4 stories
3	Spt bldg	32	10	3	320	
4	Shop	54	20	6	1,080	
5	Shop	45	12	7	540	
6	Shop	61	22	13	1,342	
7	Forge	—	—	—	10,481	Irregular
8	Fab/assem bldg	205	12	22	2,460	
9	Fab/assem bldg					
a	Admin/engr sect	73	12	20	4,380	5 stories
b	Engr/lab sect	85	25	22	10,625	5 stories
c	Fab/assem sect	85	48	22	4,080	
d	Fab/assem sect	97	73	20	7,081	
e	Shop sect	73	25	27	1,825	
10	Fab/assem bldg					
a	Shop sect	145	37	33	5,365	
b	Fab/assem sect	142	77	24	10,934	
c	Admin/engr sect	77	5	19	385	
11	Spt bldg	—	—	—	2,133	Irregular
12	Spt bldg	44	19	15	836	
13	Admin/engr bldg	—	—	—	3,201	2 stories; irregular
14	Admin engr bldg					
a	Admin/engr sect	34	10	—	1,020	Ucon since Apr 82; 3 stories
b	Admin/engr sect	43	19	14	2,451	3 stories
c	Admin/engr sect	65	20	11	3,900	3 stories
15	Admin/engr bldg	97	23	15	6,693	3 stories
16	Admin/engr bldg	97	23	15	6,693	3 stories
17	Lab/engr bldg	—	—	—	57,646	2 stories; irregular
18	Spt bldg	46	16	10	736	
19	Lab/engr bldg					
a	Lab/engr sect	92	19	25	5,244	3 stories
b	Shop sect	61	19	10	2,318	2 stories
20	Shop	—	—	—	792	Irregular
21	Shop	28	13	2	364	
22	Transshipment bldg	48	13	6	624	
23	Shop	34	19	10	646	
24	Woodshop	—	—	—	10,770	Irregular
25	Shop	—	—	—	10,292	Irregular; additions ucon since Jun 79
26	Spt bldg	24	12	10	288	
27	Fab/assem bldg	85	72	12	6,120	
28	Spt bldg	—	—	—	176	Irregular
29	Spt bldg	—	—	—	630	Irregular
30	Spt bldg	37	16	8	592	
31	Spt bldg	—	—	—	2,066	Irregular
32	Spt bldg	—	—	—	208	Irregular
33	Spt bldg	—	—	—	2,648	Irregular
34	Spt bldg	22	16	12	352	

Table B2. (Continued)

Item	Description	Dimensions (m) L	W	H	Floorspace (sq m)	Comments
35	Spt bldg	30	8	—	240	
36	Spt bldg	23	18	5	414	
37	Lab/engr bldg	45	15	14	1,350	2 stories
38	Lab/engr bldg	—	—	—	8,776	2 stories; irregular
39	Spt bldg	22	8	4	176	
40	Lab/engr bldg	49	20	14	2,940	3 stories
41	Lab/engr bldg	—	—	—	7,298	Irregular
42	Shop	—	—	—	856	Irregular
43	Lab/engr bldg	—	—	—	5,612	Irregular
44	Shop	—	—	—	2,057	Irregular
45	Warehouse	28	12	5	336	Quonset-type bldg
46	Shop	—	—	—	3,825	Irregular
47	Shop	—	—	—	2,732	Irregular
48	Shop	—	—	—	1,368	Irregular
49	Admin/engr bldg	—	—	—	9,956	Irregular
50	Shop	24	19	10	456	Ucon since Jun 80

This table is classified Secret/WNINTEL.

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Figure B3. Miass Missile Research and Development Facility

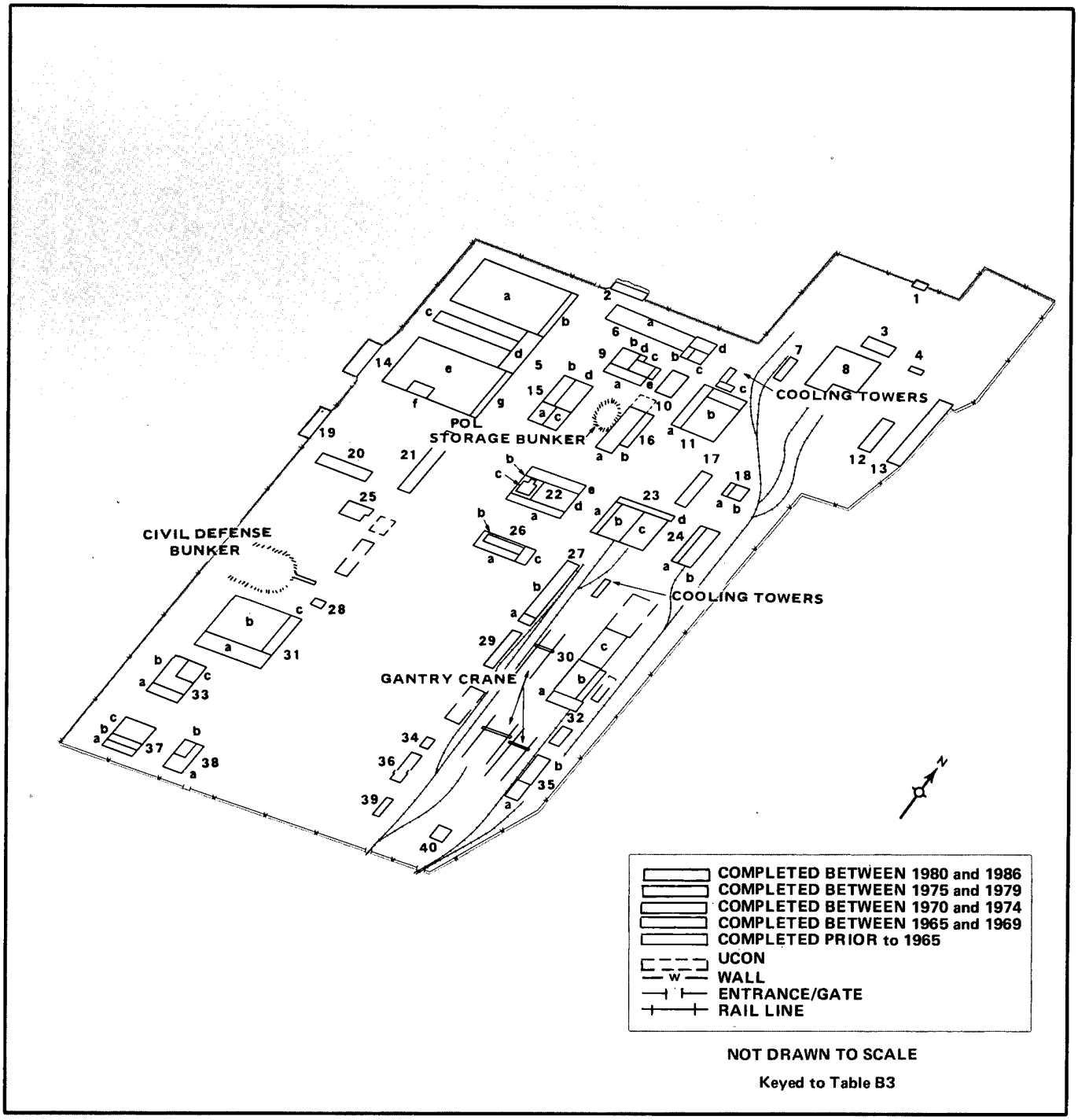

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Table B3.
Miass Missile Research and Development Facility
(Keyed to Figure B3)

Item	Description	Dimensions (m) L	W	H	Floorspace (sq m)	Comments
1	Admin/security bldg	24	15	4	360	
2	Security bldg	48	12	4	576	
3	Engr bldg	44	16	15	2,816	4 stories
4	Spt bldg	18	12	4	216	
5	Fab/assem bldg					
a	Fab assem sect	133	92	12	12,236	
b	Admin/engr sect	92	9	11	2,484	3 stories
c	Admin/engr sect	126	19	21	9,576	4 stories
d	Admin/engr sect	77	18	21	4,158	3 stories
e	Fab/assem sect	133	92	12	12,236	
f	Vert assem/test sect	31	20	30	620	
g	Admin/engr sect	93	10	11	2,790	3 stories
6	Vert assem/test bldg					
a	Engr/lab sect	120	28	20	13,440	4 stories
b	Vert assem sect	11	8	25	88	
c	Vert assem sect	24	21	28	504	
d	Engr/lab sect	42	31	24	6,510	5 stories
7	Power substation	44	12	13	528	
8	Steamplant	—	—	—	6,110	Irregular
9	Vert assem/test bldg					
a	Engr/lab sect	56	10	10	1,680	3 stories
b	Vert assem/test sect	37	25	23	925	
c	Shop sect	15	6	9	90	
d	Spt sect	21	6	9-13	126	
e	Spt sect	16	7	3	112	
10	Spt bldg	44	25	6	1,100	
11	Assem/test bldg					
a	Spt sect	98	16	—	1,568	
b	Vert assem/test sect	68	52	39	3,536	
c	Shop sect	55	31	15	1,705	
12	Spt bldg	—	—	—	1,218	Irregular
13	Shop	—	—	—	2,583	Irregular
14	Admin/security bldg	—	—	—	4,720	Irregular
15	Assem/test bldg					
a	Engr/lab sect	37	19	43	5,642	8 stories
b	Vert assem/test sect	60	25	39	1,500	
c	Shop sect	37	21	11	777	
d	Shop sect	60	22	10	1,320	
16	Shop					
a	Shop sect	86	25	16	2,150	
b	Spt sect	67	10	8	1,340	2 stories
17	Spt bldg	—	—	—	—	Irregular
18	Test bldg					
a	Engr/lab sect	26	10	16	1,040	4 stories
b	Vertical assembly/ test sect	25	19	32	475	
19	Admin/security bldg	38	12	9	912	2 stories
20	Admin/engr bldg	74	21	10	3,108	2 stories
21	Admin/engr bldg	128	18	19	11,520	5 stories
22	Assem/test bldg					
a	Engr/lab sect	80	13	11	2,080	2 stories

25X1

Table B3. (Continued)

Item	Description	Dimensions (m) L	W	H	Floorspace (sq m)	Comments
b	Vertical assembly/ test sect	31	31	39	961	
c	Vertical assembly/ test sect	20	20	83	400	
d	Shop sect	49	44	25	2,156	
e	Engr/lab sect	80	12	21	2,880	3 stories
23	Vert assem/test bldg					
a	Admin/engr sect	67	9	18	2,412	4 stories
b	Vertical assembly/ test sect	68	32	33	2,176	
c	Shop sect	67	36	15	2,412	
d	Shop sect	85	10	14	850	
24	Shop					
a	Admin/engr sect	79	9	11	1,422	2 stories
b	Shop sect	79	20	17	1,580	
25	Spt bldg	—	—	—	884	Irregular
26	Admin/engr bldg					
a	Admin/engr sect	67	31	14	2,077	
b	Admin/engr sect	55	19	18	1,045	
c	Shop sect	31	13	5	403	
27	Admin/engr bldg					
a	Spt sect	15	14	11	630	3 stories
b	Admin/engr sect	114	19	14	6,498	3 stories
28	Spt bldg	12	12	4	144	
29	Warehouse	79	12	5	948	
30	Shop					
a	Shop sect	49	19	13	931	
b	Shop sect	70	48	9	3,360	
c	Shop sect	67	36	13	2,412	Preparations for addition under way
31	Fab/assem bldg					
a	Admin/engr sect	97	22	22	6,402	3 stories
b	Fab/assem sect	84	72	10	6,048	
c	Admin/engr sect	73	19	18	6,935	5 stories
32	Warehouse	—	—	—	—	
33	Inspection/maint bldg					
a	Spt sect	49	13	7	1,274	2 stories
b	Shop sect	55	24	9	1,320	
c	Service sect	37	25	15	925	
34	Warehouse	18	13	4	234	
35	Transshippment bldg					
a	Transshipment sect	35	19	11	665	
b	Transshipment sect	60	19	10	1,140	
36	Warehouse	60	13	10	780	
37	Inspection/maint bldg					
a	Spt sect	43	11	6	946	2 stories
b	Maintenance sect	43	13	10	559	
c	Maintenance sect	43	36	8	1,548	
38	Inspection/maint bldg					
a	Spt sect	57	28	7	1,596	
b	Maintenance sect	31	19	5	589	
39	Warehouse	37	9	5	333	
40	Warehouse	—	—	—	688	Irregular

This table is classified Secret/WNINTEL.

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Figure B4. Moskva Aircraft Components Plant 25

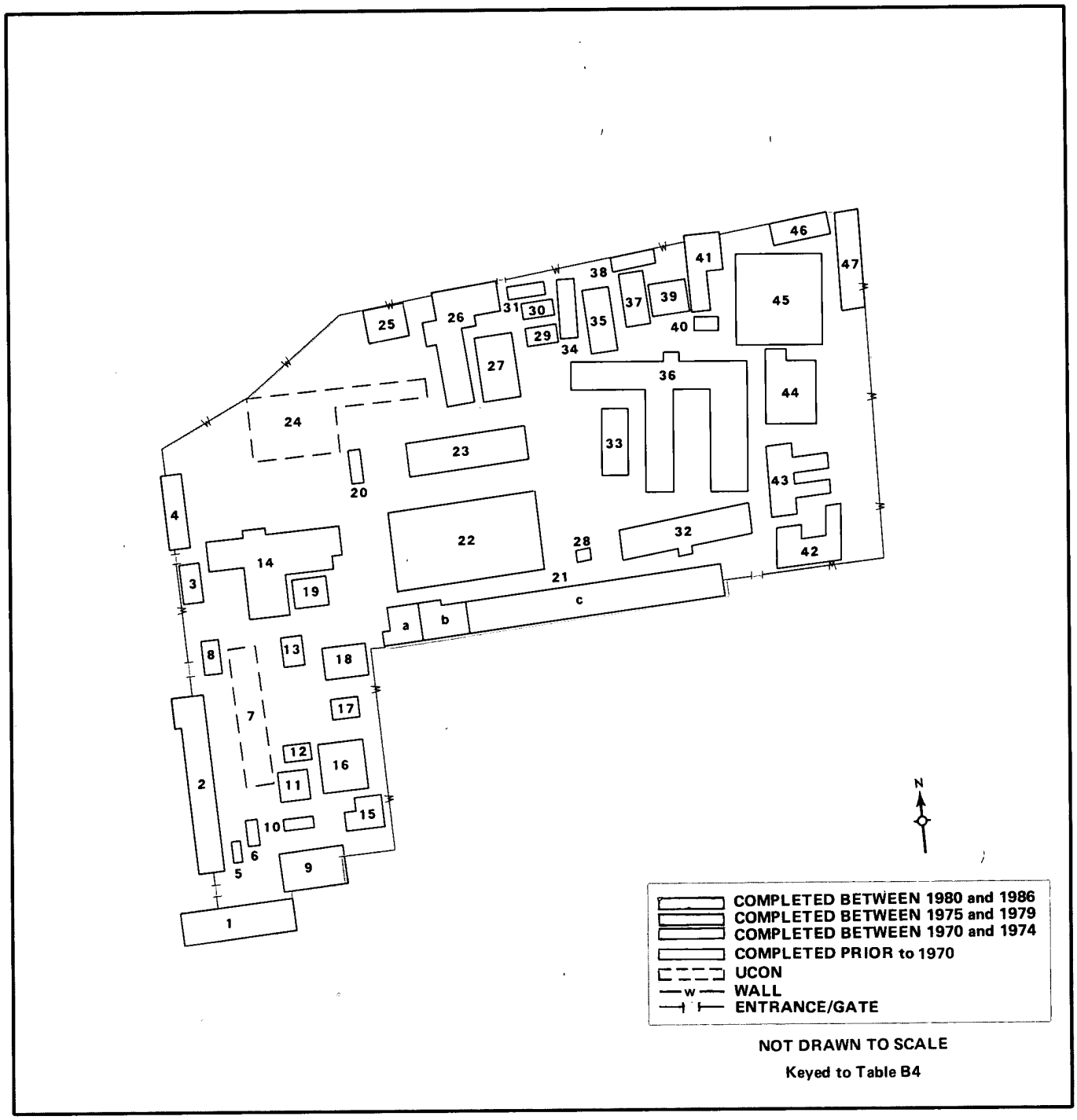

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Table B4.
Moskva Aircraft Components Plant 25
(Keyed to Figure B4)

Item	Description	Dimensions (m) L	W	H	Floorspace (sq m)	Comments
1	Admin/engr bldg	79	19	46	18,012	12 stories
2	Admin/engr bldg	—	—	—	2,109	Irregular; 3 stories
3	Admin/engr bldg	—	—	—	790	Irregular
4	Admin/engr bldg	—	—	—	1,617	Irregular; 3 stories
5	Spt bldg	7	4	—	28	
6	Spt bldg	8	4	—	32	
7	Admin/engr bldg	—	—	—	—	Ucon
8	Spt bldg	—	—	—	132	Irregular
9	Admin/engr bldg	45	22	14	1,980	2 stories
10	Spt bldg	35	14	—	490	
11	Admin/engr bldg	44	19	14	1,672	2 stories
12	Spt bldg	7	4	—	28	
13	Spt bldg	38	13	8	494	
14	Fab/assem bldg	—	—	—	5,090	Irregular
15	Spt bldg	—	—	—	64	Irregular
16	Admin/engr bldg	31	31	35	7,688	8 stories
17	Spt bldg	7	7	—	49	
18	Spt bldg	28	21	8	1,176	2 stories
19	Spt bldg	25	18	5	450	
20	Spt bldg	20	9	11	360	2 stories
21	Admin/engr bldg					
a	Admin/engr sect	—	—	—	1,197	Irregular; 3 stories
b	Admin/engr sect	38	22	15	2,508	3 stories
c	Admin/engr sect	179	19	14	10,203	3 stories
22	Fab/assem bldg	—	—	—	5,337	Irregular
23	Fab/assem bldg	—	—	—	4,977	Irregular; 3 stories
24	Unid bldg	—	—	—	—	Ucon
25	Spt bldg	24	21	7	1,008	2 stories
26	Shop	—	—	—	466	Irregular
27	Shop	—	—	—	1,006	Irregular
28	Utility bldg	4	4	—	16	
29	Spt bldg	19	10	4	190	
30	Spt bldg	8	8	3	64	
31	Spt bldg	21	10	3	210	
32	Admin/engr bldg	39	8	9	312	
33	Shop	27	13	11	351	
34	Spt bldg	35	11	5	385	
35	Shop	38	19	10	1,444	2 stories
36	Admin/engr bldg	—	—	—	12,801	Irregular
37	Shop	24	16	4	384	
38	Shop	39	8	9	312	
39	Shop	—	—	—	874	Irregular
40	Shop	27	13	11	351	
41	Shop	—	—	—	684	Irregular
42	Forge/foundry	—	—	—	670	Irregular
43	Forge/foundry	—	—	—	4,996	Irregular
44	Forge/foundry	31	20	—	620	
45	Forge/foundry	—	—	—	3,386	Irregular
46	Forge/foundry	35	13	13	1,365	3 stories
47	Forge/foundry	57	14	8–10	798	

This table is classified Secret/WNINTEL.

Figure B5. Moskva Guided Missile and Space Research and Production Center Reutov

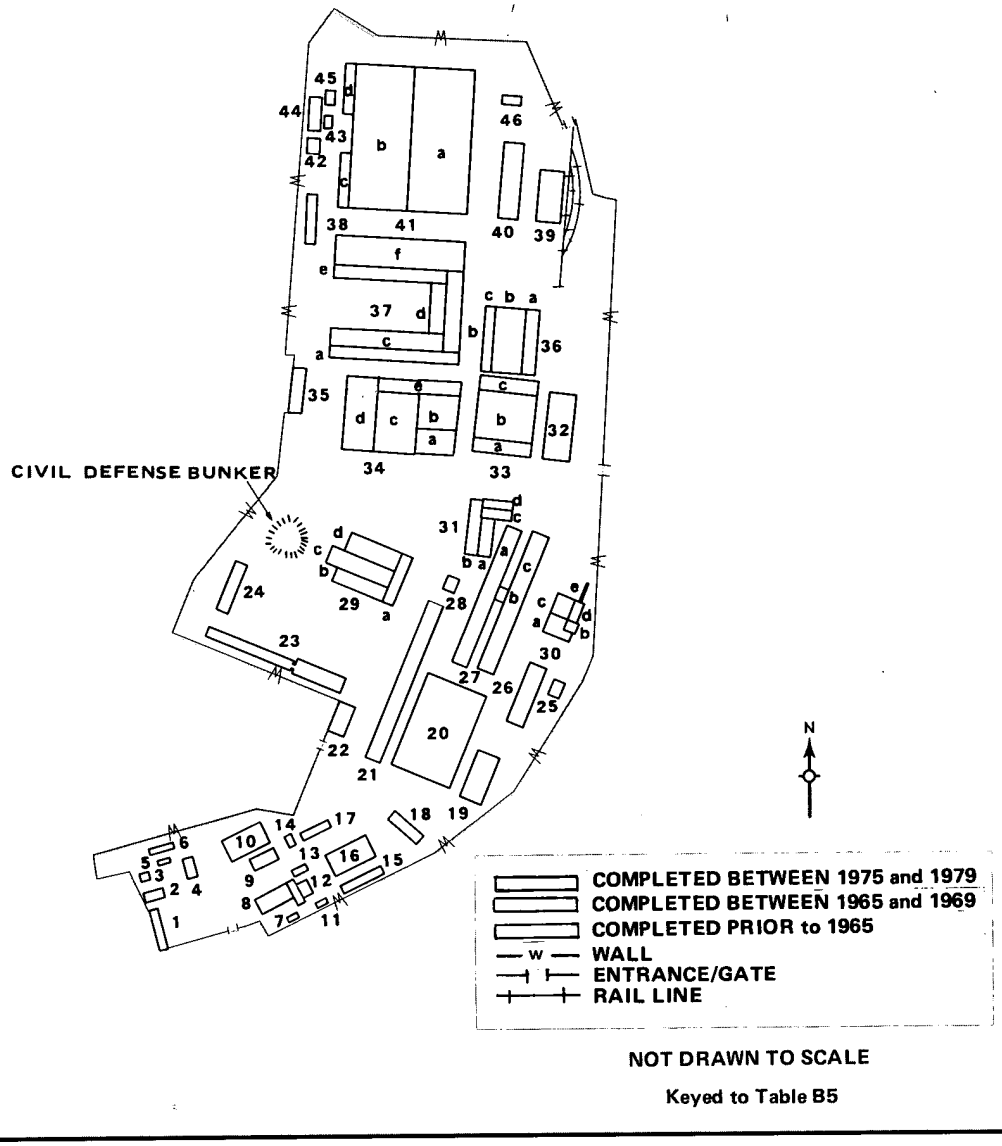

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Table B5.
Moskva Guided Missile and Space Research and Production Center Reutov
(Keyed to Figure B5)

Item	Description	Dimensions (m) L	W	H	Floorspace (sq m)	Comments
1	Shop	—	—	—	3,402	Irregular
2	Shop	31	12	6	372	
3	Utility bldg	12	12	8	144	
4	Stor bldg	30	8	—	240	
5	Utility bldg	13	8	5	104	
6	Stor bldg	30	8	—	240	
7	Spt bldg	14	8	—	112	
8	Shop	—	—	—	2,144	Irregular
9	Shop	36	18	9	648	Irregular
10	Greenhouse	—	—	—	—	
11	Spt bldg	14	7	4	98	
12	Spt bldg	21	11	15	231	
13	Spt bldg	23	12	6	276	
14	Spt bldg	16	8	5	128	
15	Shop	55	19	13	1,045	
16	Shop	57	33	14	5,643	3 stories
17	Shop	—	—	—	352	Irregular
18	Admin bldg	53	17	12	2,703	3 stories
19	Warehouse	72	25	7	1,800	
20	Fab/assem bldg	—	—	—	12,062	Irregular
21	Admin/engr bldg	—	—	—	17,289	Irregular
22	Admin bldg	—	—	—	591	Irregular; 2 stories
23	Admin bldg	—	—	—	10,702	Irregular
24	Admin bldg	79	13	18	4,108	4 stories
25	Spt bldg	24	15	7	360	
26	Steamplant	—	—	—	1,763	Irregular
27	Engr/lab bldg					
a	Shop sect	215	37	9	7,955	
b	Shop sect	22	18	9	396	
c	Engr/lab sect	215	18	22	19,350	5 stories
28	Spt bldg	28	16	7	448	
29	Assem/checkout bldg					
a	Engr sect	79	12	17	3,792	4 stories
b	Assem/checkout sect	73	24	17	1,752	
c	Assem/checkout sect	96	26	25	2,496	
d	Assem/checkout sect	73	24	17	1,752	
30	Engine test bldg					
a	Test/spt sect	24	20	12	480	
b	Air intake tower	12	12	20	144	
c	Test/spt sect	24	9	9	216	
d	Test/spt sect	33	12	6	396	
e	Diffuser	27	—	—	—	5 meters maximum diameter
31	Assem/test bldg					
a	Shop sect	50	20	26	1,000	
b	Admin/engr sect	85	15	26	6,375	5 stories
c	Vert assem/test sect	41	18	35	738	
d	Shop sect	41	18	26	738	
32	Shop	110	37	10	4,070	

Table B5. (Continued)

Item	Description	Dimensions (m) L	W	H	Floorspace (sq m)	Comments
33	Fab/assem bldg					
a	Fab/assem sect	73	24	15	1,752	
b	Fab/assem sect	73	70	12	5,110	
c	Admin/engr sect	73	12	14	3,504	4 stories
34	Assem/test bldg					
a	Vert assem/test sect	40	39	45	1,560	
b	Assem/test sect	48	39	29	1,872	
c	Assem/test sect	84	56	29	4,704	
d	Test/spt sect	104	17	16	1,768	
e	Admin/engr sect	95	16	16	6,080	4 stories
35	Admin bldg	—	—	—	2,328	Irregular
36	Vert assem/test bldg					
a	Spt sect	96	18	19	1,728	
b	Vert assem/test sect	96	40	41	3,840	
c	Spt sect	96	12	19	5,760	5 stories
37	Lab/test bldg					
a	Lab/test sect	157	19	17	2,983	
b	Admin/engr sect	163	12	13	7,824	4 stories
c	Lab/test sect	146	20	13	2,920	
d	Spt sect	76	12	13	912	
e	Lab/test sect	132	12	13	1,584	
f	Lab/test sect	132	47	13	6,204	
38	Admin/engr bldg	70	13	9	1,820	2 stories
39	Shop	54	31	19	1,674	
40	Shop	—	—	—	4,749	Irregular
41	Fab/assem bldg					
a	Fab/assem sect	217	73	40	15,841	
b	Fab/assem sect	75	70	12	5,250	
c	Admin/engr sect	73	10	12	2,190	3 stories
d	Admin/engr sect	73	10	12	2,190	3 stories
42	Warehouse	24	16	6	384	
43	Stor bldg	49	16	5	784	
44	Warehouse	22	11	—	242	
45	Stor bldg	30	10	—	300	
46	Spt bldg	19	7	7	133	

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Figure B6. Moskva Missile Production Plant Fili 23

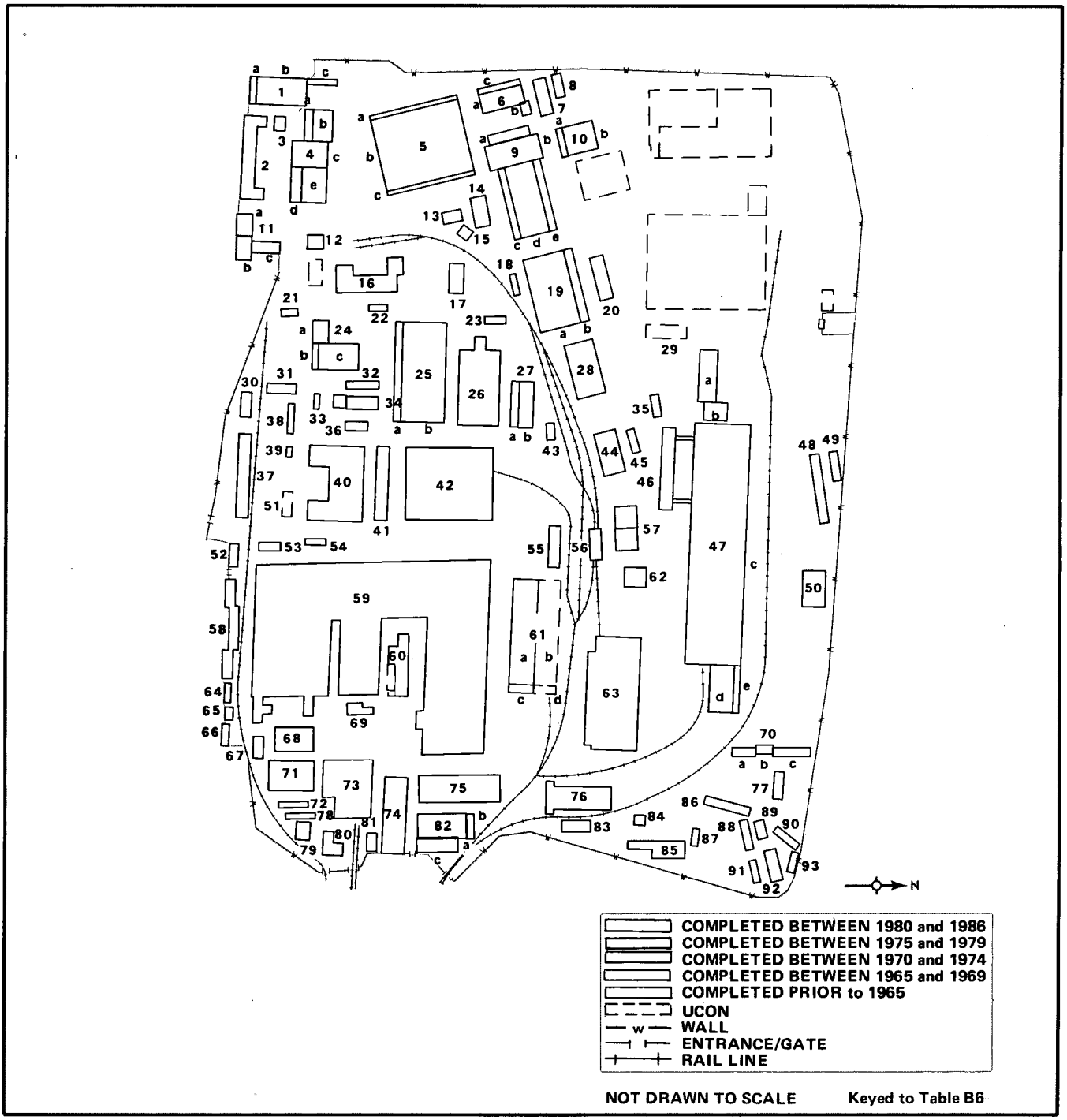

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Table B6.
Moskva Missile Production Plant Fili 23
(Keyed to Figure B6)

Item	Description	Dimensions (m) L	W	H	Floorspace (sq m)	Comments
1	Engr/lab bldg					
a	Admin/engr sect	43	6	15	774	3 stories
b	Lab/engr sect	90	50	15	4,500	
c	Admin sect	55	20	15	4,400	4 stories
2	Admin bldg	—	—	—	14,492	Irregular; 4 stories
3	Prob assem/test bldg	30	29	14	870	Irregular
4	Assem/test bldg					
a	Admin/engr sect	52	6	12	624	2 stories
b	Vert assem/test sect	52	34	38	1,768	
c	Vert assem/test sect	55	41	26	2,255	
d	Admin/engr sect	58	6	12	696	2 stories
e	Shop sect	58	49	12	2,842	
5	Fab/assem bldg					
a	Admin/engr sect	146	9	11	2,628	2 stories
b	Fab/assem sect	146	143	11	20,878	
c	Admin/engr sect	146	9	11	2,628	2 stories
6	Shop					
a	Shop sect	73	47	8	3,431	
b	Shop sect	22	13	9	286	
c	Admin/engr sect	73	6	8	876	2 stories
7	Warehouse	58	21	—	1,218	
8	Warehouse	43	12	—	516	
9	Fab/assem bldg					
a	Admin/engr sect	16	13	29	1,248	6 stories
b	Assem/shop sect	88	50	20	4,400	
c	Admin/engr sect	146	9	15	5,256	4 stories
d	Fab/assem sect	146	50	15	7,300	
e	Admin/engr sect	146	9	15	5,256	4 stories
10	Admin/engr bldg					
a	Admin/engr sect	52	12	9	1,248	2 stories
b	Shop sect	66	52	9	3,432	
11	Admin/engr bldg					
a	Admin/engr sect	—	—	—	1,523	Irregular; 2 stories
b	Admin/engr sect	46	21	—	3,864	4 stories
c	Admin/engr sect	49	24	—	2,352	2 stories
12	Shop	—	—	—	440	Irregular
13	Shop	32	23	—	736	
14	Shop	—	—	—	901	Irregular
15	Shop	—	—	—	390	Irregular
16	Steamplant	—	—	—	3,400	Irregular
17	Shop	—	—	—	1,539	Irregular
18	Utility bldg	—	—	—	367	Irregular
19	Fab/assem bldg					
a	Fab/assem sect	145	82	9	11,890	
b	Admin/engr sect	145	9	9	2,610	2 stories
20	Shop	88	18	—	1,584	
21	Warehouse	41	14	—	574	
22	Utility	27	12	—	324	
23	Warehouse	—	—	—	352	Irregular

Table B6. (Continued)

Item	Description	Dimensions (m) L	W	H	Floorspace (sq m)	Comments
24	Admin/engr bldg					
a	Shop sect	49	18	11	882	
b	Admin/engr sect	44	12	—	1,584	3 stories
c	Shop sect	—	—	—	4,180	Irregular
25	Admin/engr bldg					
a	Admin/engr sect	180	85	21	15,300	
b	Fab/assem sect	180	12	21	4,320	2 stories
26	Fab/assem bldg	—	—	—	10,577	Irregular
27	Admin/engr bldg	—	—	—	—	Irregular
a	Admin/engr sect	91	12	18	3,276	3 stories
b	Shop sect	72	24	19	1,728	
28	Shop	—	—	—	4,243	Irregular
29	Unid bldg	—	—	—	—	Ucon
30	Admin/engr bldg	45	21	—	3,780	4 stories
31	Lab/engr bldg	45	21	11	2,835	3 stories
32	Admin/engr bldg	38	8	7	608	2 stories
33	Utility bldg	—	—	—	776	Irregular
34	Shop	—	—	—	6,142	Irregular
35	Utility bldg	37	12	—	444	
36	Shop	31	18	11	558	
37	Admin/engr bldg	162	18	—	14,580	5 stories
38	Warehouse	55	12	—	660	
39	Warehouse	101	12	5	1,212	
40	Shop	—	—	—	12,309	Irregular
41	Shop	139	21	12	2,919	
42	Fab/assem bldg	—	—	—	24,539	Irregular
43	Transshipment bldg	32	11	—	352	
44	Shop	—	—	—	3,818	Irregular
45	Warehouse	45	12	—	540	
46	Admin/engr bldg	158	20	10	6,320	2 stories
47	Fab/assem bldg					
a	Shop sect	100	31	19	3,100	
b	Spt sect	42	37	16	1,554	
c	Fab/assem sect	464	97	34	45,008	
d	Fab/assem sect	88	38	20	3,344	
e	Admin/engr sect	88	12	23	5,280	5 stories
48	Warehouse	137	12	—	1,644	
49	Warehouse	45	12	—	540	
50	Stor bldgs (4)	—	—	—	2,016	
51	Utility bldg	45	21	—	945	Ucon
52	Warehouse	49	12	—	588	
53	Warehouse	32	17	—	544	
54	Warehouse	31	12	—	372	
55	Shop	72	20	—	1,440	
56	Warehouse	45	24	—	1,080	
57	Shop	91	70	11	6,370	
58	Admin/engr bldg	—	—	—	7,697	Irregular
59	Fab/assem bldg	—	—	—	115,563	Irregular
60	Shop	—	—	—	2,942	Irregular

Table B6. (Continued)

Item	Description	Dimensions (m) L	W	H	Floorspace (sq m)	Comments
61	Fab/assem bldg					
a	Fab/assem sect	204	40	19	8,160	
b	Fab/assem sect	204	40	19	8,160	Ucon
c	Admin/engr sect	40	13	19	2,600	5 stories
d	Admin/engr sect	40	13	19	2,600	5 stories; ucon
62	Equip garage	70	20	11	1,400	
63	Assem bldg/shop	—	—	—	21,055	Irregular
64	Admin bldg	37	11	—	407	
65	Admin bldg	35	11	—	385	
66	Admin bldg	37	11	—	407	
67	Admin bldg	—	—	—	982	Irregular
68	Shop	—	—	—	3,407	Irregular
69	Shop	—	—	—	1,800	Irregular
70	Shop					
a	Shop sect	46	18	—	828	
b	Admin sect	23	18	10	1,242	3 stories
c	Admin sect	69	18	—	2,484	2 stories
71	Shop	—	—	—	2,973	Irregular
72	Warehouse	67	12	—	804	
73	Fab/assem bldg	—	—	—	10,260	Irregular
74	Shop	152	34	12	5,110	
75	Shop	—	—	—	7,506	Irregular
76	Shop	—	—	—	5,607	Irregular
77	Spt bldg	56	19	11	2,128	2 stories
78	Spt bldg	46	12	—	1,104	2 stories
79	Warehouse	36	24	7	864	
80	Warehouse	—	—	—	1,602	Irregular
81	Spt bldg	37	15	6	555	
82	Shop					
a	Shop sect	80	15	19	1,200	
b	Admin sect	46	15	19	2,070	3 stories
c	Shop sect	72	32	19	2,304	
83	Shop	—	—	—	1,561	Irregular
84	Warehouse	20	20	—	400	Irregular
85	Shop	—	—	—	2,040	Irregular
86	Shop	82	12	—	984	
87	Warehouse	32	15	—	480	
88	Warehouse	41	14	—	574	
89	Warehouse	38	11	—	418	
90	Warehouse	63	15	—	945	
91	Warehouse	—	—	—	1,277	Irregular
92	Warehouse	—	—	—	1,277	Irregular
93	Warehouse	34	9	—	306	

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Figure B7. Moskva Scientific Research Institute of Medium Machine Building Industry

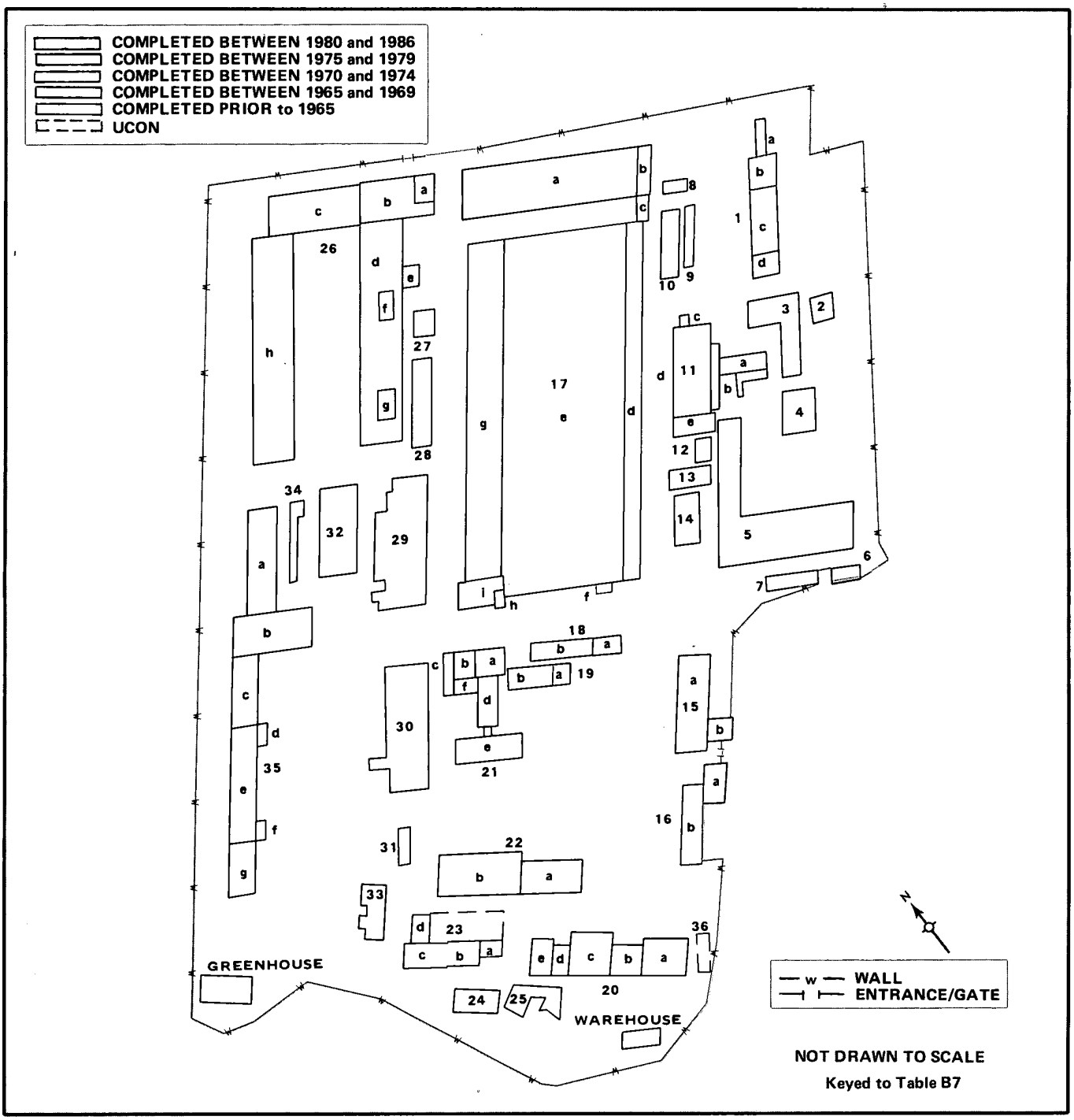

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Table B7.
Moskva Scientific Research Institute of Medium Machine Building Industry
(Keyed to Figure B7)

Item	Description	Dimensions (m) L	W	H	Floorspace (sq m)	Comments
1	Shop					
a	Storage sect	18	7	5	126	
b	Shop sect	19	15	6	285	
c	Shop sect	32	19	6	608	
d	Admin sect	21	10	8	420	2 stories
2	Spt bldg	13	12	—	156	
3	Warehouse	—	—	—	675	Irregular
4	Vehicle stor bldg	—	—	—	295	Irregular
5	Shop	—	—	—	2,574	Irregular
6	Spt bldg	18	6	5	108	
7	Spt bldg	33	7	3	231	
8	Spt bldg	14	6	—	84	
9	Spt bldg	30	7	—	210	
10	Shop	33	12	6	396	
11	Shop					
a	Shop sect	27	8	—	216	
b	Shop sect	30	4	7	120	
c	Shop sect	7	5	7	35	
d	Shop sect	42	25	9	1,050	
e	Admin sect	24	10	13	720	3 stories
12	Shop	—	—	—	156	Irregular
13	Shop	26	10	7	260	
14	Shop	18	17	11	612	2 stories
15	Admin/engr bldg					
a	Admin/engr sect	44	18	20	3,960	5 stories
b	Admin/engr sect	14	13	6	182	
16	Admin bldg					
a	Admin sect	19	13	10	741	3 stories
b	Admin sect	38	14	14	1,596	3 stories
17	Fab/assem bldg					
a	Fab/assem sect	107	25	14	2,675	
b	Admin/engr sect	25	8	20	1,000	5 stories
c	Admin/engr sect	13	10	19	650	5 stories
d	Admin/engr sect	172	11	13	7,568	4 stories
e	Fab/assem sect	172	78	13	13,416	
f	Spt sect	11	6	—	66	
g	Final assem sect	162	19	20	3,078	
h	Spt sect	16	8	—	128	
i	Admin/engr sect	26	13	17	1,300	4 stories
18	Shop					
a	Shop sect	18	10	10	360	2 stories
b	Shop sect	45	8	10	720	2 stories
19	Shop					
a	Shop sect	8	6	—	48	
b	Shop sect	22	10	—	220	
20	Engr/lab bldg					
a	Engr/lab sect	29	17	10	986	2 stories
b	Engr/lab sect	17	14	8	476	2 stories
c	Engr/lab sect	27	20	8	1,080	2 stories
d	Engr/lab sect	14	11	8	308	2 stories
e	Engr/lab sect	18	12	8	432	2 stories

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Table B7. (Continued)

Item	Description	Dimensions (m) L	W	H	Floorspace (sq m)	Comments
21	Engr/lab bldg					
a	Spt sect	20	12	11	240	
b	Spt sect	13	9	—	117	
c	Spt sect	19	7	2	133	
d	Engr/lab sect	25	13	14	975	3 stories
e	Engr/lab sect	47	12	14	1,692	3 stories
f	Spt sect	9	7	2	63	
22	Engr/lab bldg					
a	Engr/lab sect	40	16	9	1,280	2 stories
b	Engr/lab sect	53	20	9	2,120	2 stories
23	Spt bldg					
a	Spt sect	14	8	—	112	
b	Spt sect	24	13	—	312	
c	Spt sect	30	13	11	780	2 stories
d	Spt sect	15	13	13	585	3 stories
24	Spt bldg	—	—	—	319	Irregular
25	Spt bldg	—	—	—	161	Irregular
26	Engr/admin/lab bldg					
a	Engr/admin sect	13	13	—	169	
b	Engr/admin sect	109	19	19	10,355	5 stories
c	Engr/admin sect	13	13	—	169	
d	Engr/lab sect	105	26	25	10,920	4 stories; ucon
e	Engr/lab sect	10	8	—	320	4 stories
f	Engr/lab sect	13	10	—	130	
g	Engr/lab sect	14	10	—	140	
h	Engr/lab sect	109	25	20	8,175	3 stories
27	Spt bldg	14	12	8	336	2 stories
28	Engr/lab bldg	42	13	—	1,638	3 stories
29	Shop	—	—	—	3,853	Irregular
30	Steamplant	—	—	—	1,322	Irregular
31	Spt bldg	16	7	6	112	
32	Shop	—	—	—	1,380	Irregular
33	Spt bldg	—	—	—	366	Irregular
34	Warehouse	—	—	—	148	Irregular
35	Engr/lab bldg					
a	Shop sect	48	18	9	1,728	2 stories
b	Shop sect	50	19	16	950	
c	Shop sect	35	15	9	1,050	2 stories
d	Shop sect	10	4	61	520	13 stories
e	Shop sect	10	4	61	572	13 stories
f	Shop sect	56	64	61	46,592	13 stories
g	Shop sect	25	15	9	750	2 stories
36	Shop	20	7	—	140	Ucon

This table is classified Secret/WNINTEL.

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